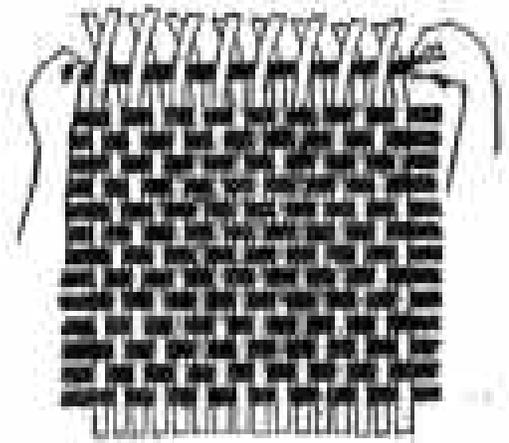
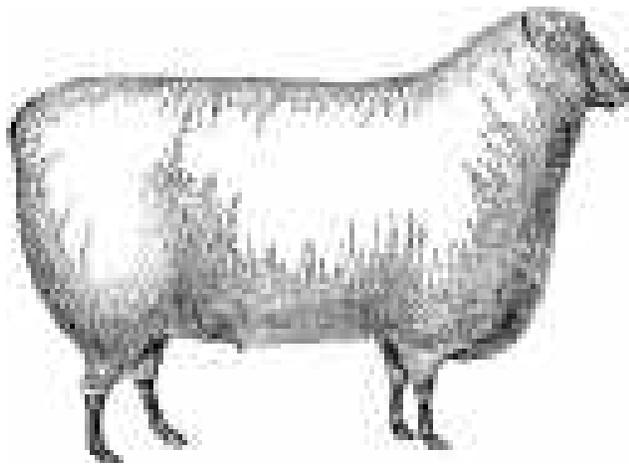


AMERICAN  
TEXTILE  
HISTORY  
MUSEUM

Threads of Learning  
Teacher's Guide

# Fleece to Fabric



Revised July 2008

THE AMERICAN TEXTILE HISTORY MUSEUM  
491 Dutton Street Lowell, Massachusetts  
Education Department: (978) 441-0400 X250

[www.athm.org](http://www.athm.org)



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## Introduction

*Threads of Learning* Museum programs are offered by the Department of Museum Education at the American Textile History Museum (ATHM), located in Lowell, Massachusetts. The Museum's mission is to tell America's story through the art, science, and history of our textiles. Museum education programs are designed to provide enjoyable opportunities for personal growth and discovery through exposure to objects and information that connect to America's diverse textile heritage. Through inquiry based activities students develop their creativity, critical thinking, and problem solving skills.

## Objective

The objective of the Fleece to Fabric Program is to provide students with the basic understanding of colonial era including daily life, history, geography, economics, and the role that cloth-making had in the lives of the colonists.

## Program Description

Students will experience daily life in colonial times through the collections, research information and activities provided at the Museum and in this Teacher's Guide. While at the museum students will "become" members of an actual local New England farm family and neighborhood in East Chelmsford, circa 1770. They will learn about the colonies' relationship to England, major historical events leading to independence, economics and geography. Museum teachers will take students on a guided tour of the *Textile Revolution: An Exploration Through Space and Time* exhibition with emphasis on colonial daily life, trade, bartering, and the natural fibers and tools used in cloth-making. Students will learn about the transition from "homespun" to factory made cloth that took place during the Industrial Revolution. The hands-on portion of the program allows students to experience the "homespun" method of processing raw wool from *Fiber to Fabric* as they create their own poster with samples of each step. The program includes background information on the original thirteen colonies, geography, and major historic events through 1812.

Teachers are encouraged to use this Teacher's Guide for pre and post Museum visit lessons including textile vocabulary, discussions, writing assignments, and hands-on activities.



# **Pre-Visit Lesson Plans**



# Pre-Visit Lesson Plan

**Title:** Collections and Museums

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 hour

## Objectives:

- Students will recognize elements involved in collecting items
- Students will understand what a museum is
- Students will understand the role of a museum in a community

## Materials:

- Blackboard/chalk

## Steps:

1. Begin class by asking students if anyone has a collection.  
~ Make a web diagram of responses on the board with “Collections” in the center.
2. Ask students “What makes these ‘collections’?”
3. Define collections.  
~A group of objects having something of importance in common.  
~ Identify the common element in each collection on the board.  
(e.g. similar objects, from the same time period, all related to a certain subject or topic, etc.)
4. Ask the students why they started their collections.  
~ Make a list on the board.  
Possible responses or additions could be:
  - These particular objects are interesting
  - Possible future value and historical importance
  - Curiosity (educational interest for self)
  - Interest in object’s common thread (time period, topic, etc.)
5. Ask the class if they ever have wanted or have shown their collections to others.  
~ Discuss
6. Ask the class how they would go about showing their collections. (Focus the conversation on presentation.)
7. Define “Museum” as a place to display a collection where people can do the following:  
~ see and admire art and artifacts.  
~ learn about art and history, and others’ cultures.
8. Ask the class if anyone has ever visited a museum before.  
~Name some local museums  
~Ask if the following could be considered museums:
  - The Zoo
  - The Aquarium
  - Botanical Gardens
  - Planetariums

9. Announce to the class that they will be visiting The American Textile History Museum. This museum displays a large collection of tools, machinery, and other artifacts related to the production of textiles from the 1700s through the 20<sup>th</sup> Century.

# Pre-Visit Lesson Plan

**Title:** Introduction to The American Textile History Museum

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 20 minutes

## Objectives:

- Students will understand “what makes a museum”, and specifically about The American Textile History Museum, in order to make their trip to the museum more meaningful.

## Materials:

- Blackboard/chalk

## Steps:

1. Begin class by listing the museums that students have visited (examples of museums students may have visited: MFA, Museum of Science, The New England Quilt Museum in Lowell, House Museums which are historic homes restored and used as a museum, etc.)
2. What kinds of things did you see in these museums (for example: paintings, drawings, sculpture, artifacts, books, tools).
3. Ask students what all of the different museums have in common (focus on “collections”). They all “house” collections.
4. Define “museum” for students: A museum is an institution that collects, preserves, studies and exhibits works of art.
5. Inform students that they will be visiting The American Textile History Museum. Ask students what they think this museum collects; studies; preserves; and exhibits.
6. You may have to define the word “textile” for some students. Review the definition. Textiles are cloth items as well as a wide variety of other things.
7. Provide students with a description of the museum:  
The American Textile History Museum is a national treasure that is home to one of the largest collections of artifacts, images, cloth samples, tools and machines relating to the history of textile production from the colonial days through the 20<sup>th</sup> century.
8. Brainstorm with your class on how they use textiles day-to-day (sheets, bedding, towels, rugs, upholstery, curtains, car upholstery, canvas sneakers, flags, backpacks, etc.).
9. Ask your class to think about the museums they have visited. What types of buildings were the museums in? Ask students to describe them and talk about why it might be important for the building to be the way it is.  
\*You can mention where museums are located, how accessible they are to the public, how big they are, what the rooms are like, wall space, colors, etc.

10. Inform students of the following facts:

- The American Textile History Museum is located in Lowell, Massachusetts.
- It is housed in an old building which was built around 1870.
- The building was originally a machine factory called Kitson Machine Company. This company manufactured machinery that was used for processing cotton.
- This building was constructed with strong beams and columns to support the floors which held heavy textile machinery.

11. Ask students to keep this information in mind about the museum's collections and the building in which they will be visiting as they tour the museum.

# Pre-Visit Lesson Plan

**Title:** Museology

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 20 minutes

## Objectives:

- Students will know how museum present exhibits and the objects in them
- Students will know museum decorum

## Materials:

- Blackboard/chalk
- Museology Vocabulary List (Included with this lesson)

## Steps:

1. Begin class by explaining that you are going to be discussing museums and some important things to know before visiting a museum.
2. Ask the class what the word EXHIBITION means. (Refer to Museology Vocabulary List)
3. Explain that museums have a staff of several people that put the exhibits together and help bring people into the museums to see the exhibits. Note that one important staff member is the CURATOR. (Refer to Museology Vocabulary List.)
4. Ask the class how they know what they are looking at when they view an object or artifact in a museum and how they get additional information on the object. (Labels)
5. Ask students what information is usually on a label in a museum.  
\*You can make a mock label on the chalk board. Include:
  - ~Title of piece
  - ~Maker (or artisan)
  - ~Place where the object is from
  - ~Date that the object was made
  - ~Materials that the object is made from
6. Discuss the fact that sometimes the museum curator does not know the maker of the object. In this case the label may say “Maker unknown” or “Anonymous.”
7. Explain that if the curator is unsure of the absolute year that the object was made, he or she can make an estimate and will list the date as “c” and then state the year (example: c.1850). “c.” stands for “circa.” This means “around.” By stating circa and then the year, the curator is saying that the object is from sometime around that year.
8. Ask students to brainstorm as a group on some important things to remember when going into a museum. Create a list on the board. You can cover the following: no food, drink or gum in the museum, keeping noise level down, no touching exhibit objects or displays, no photography.  
\*When going over these things, please note to students that there is a reason for the things mentioned above. Each one directly relates to the care and safety of the museum’s collections, as well as the enjoyment of the museum by other visitors who might be there that same day.

## Museology Vocabulary List

- **Anonymous:** Unknown person
- **Artifact:** An object produced by human workmanship, especially a tool, weapon, or ornament of archaeological or historical interest.
- **Circa:** Approximately or around (example: written circa or c. 1600)
- **Collection:** A group of objects or works that are kept together, especially to be viewed or studied.
- **Conservation:** The act or process of conserving (taking care of, keeping in a safe condition)
- **Curator:** A professional in a museum responsible for the study of collections.
- **Exhibition:** A display of art objects or collections. There are two types of exhibitions: permanent and changing.
- **Label:** Posted information, serving to identify an object, especially to indicate its origin, owner, age and use.
- **Museum:** An institution for acquisition, preservation, study, and exhibition of works of art, objects of historical value or interest.

# Pre-Visit Lesson Plan

**Title:** Overview of Colonial Life

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 hour

## Objectives:

- Students will know about daily life during the colonial times, including housing, living arrangements, chores, responsibilities, hygiene, clothing, work, and fun

## Materials:

- *“Life During Colonial Times”* (Included with this lesson)
- *“Colonial Times Question and Answer Guide”* (Included with this lesson)

## Steps:

1. Explain to class that they will be learning about the colonial era. Explain that the colonial era took place over 200 years ago.
2. Discuss the colonial era, emphasizing the relationship of the colonies to England.
3. Tell students that they are going to learn about what life was like during those times.
4. Tell students that you are going to read a short description of what life was like during these times. If they feel comfortable doing so, they can close their eyes and try to get a picture in their heads of what life was like and what things looked like during those times.
5. Read the short description of life for a family living during colonial times – *“Life During Colonial Times.”*
6. Ask students if they have a better idea now of what life was like during that time.
7. Tell students that you will be asking questions about colonial times. They will know some of the answers from the description you just read. Students will learn about other details as you lead them in discussion while doing the questions/answers.
8. Using the *“Colonial Times Questions & Answers Guidelines”* sheet, begin asking the questions from the sheet. Have students take turns answering the questions based on what they think from the description you read. After students have had a chance to discuss what they think and have discussed possibilities, verify their answers by reading the answers provided in the Guide.

# Life During Colonial Times

## Housing

### **New England Homes, Farmhouses**

- Farmhouses, as well as other homes, ranged in size from 10 by 14 feet to 16 square feet. A small number of houses were larger.
- The most common type of house is now known as a “cape.”
- They were often one or one and one-half stories with three or four rooms around a central chimney.
- Many farmhouses were built facing the south in order to take full advantage of the sun. To increase warmth, the ceilings were low and sometimes unfired brick or seaweed was used inside the walls for insulation.

### **Living Arrangements**

- It was not uncommon to share the house with another family. For example, you and your family might share a house with your brother and his family.
- Some families also had extended family, hired hands, servants, and boarders who lived in the house.

## **Chores**

In colonial times, there were no vacuum cleaners, washing machines, or dishwashing machines. There was no electricity or plumbing. Women were responsible for the following:

- Cooking was done over a fire in the fireplace. Pies and breads were baked in brick ovens that were heated with hot embers from the fire.
- Cleaning was a never-ending job due to soot from the fire, dust from spinning, etc. People usually would do complete cleaning, including whitewashing walls, in the springtime.
- Laundry was normally done once a week. It was a very hard job. Women used to make their own soap.
- Ironing was done after laundry. It was done on a large table covered by an old blanket. Box irons contained a small charcoal fire and stayed hot. Flat irons or sadirons had to be returned to the fire for re-heating.
- Another job was emptying the chamber pots. Bathrooms were located in a small building separate from the house. People used to keep bowls near their beds to urinate in.
- Other chores included making candles, scouring pewter, making the beds, spinning, sewing, knitting, milking cows, gathering eggs, feeding the hens, and tending to the fire.

### **Men’s Responsibilities**

- Tending to the animals and butchering
- Tending to the Crops: planting, harvesting
- Fixing broken and worn items
- Chopping firewood
- Building the house, barn or stables
- Defending the home

### **Children's Responsibilities**

- The people of New England placed great value on education. Children were taught to read and write. Girls were taught housekeeping skills and boys were taught carpentry skills.
- Children were also expected to help out with the chores.

### **Bedding and Sleeping Arrangements**

#### **The Beds**

- Beds were made from wood with ropes strung across the frame to support the mattress.
- In the winter the mattresses were stuffed with feathers and in the summer they were stuffed with straw or corn husks.

#### **Sleeping Arrangements**

- Babies often slept with the mother and father to make sure the newborn was warm and protected.
- Boys and girls were separated from a young age. Several sisters would sleep in the same bed for warmth. Brothers would do the same, but their bed was often located in the attic or loft.
- People often went to bed when the sun went down and rose when the sun came up. If people stayed up after sunset, they would have to carry a candle to see where they were going.

#### **Games and other activities**

- Colonial Children would sometimes practice their penmanship in copybooks they made. They used quill pens made from turkey or goose feathers.
- A popular girl's game was called GAME OF GRACES. Two people stood about 10 feet from each other and used two wooden sticks to toss and catch a wooden hoop.
- Children played with dolls, dollhouses, balls, marbles, and tops. They also played tag, hopscotch (which was called "Scotch-hoppers"), and went sledding (which was called "coasting").

#### **Parties and other gatherings**

- Frolics combined festive activity with courtship.
- Husking, quilting, and apple paring parties were popular. They would work and socialize.
- People also had tea and supper parties.
- Informal gatherings were common. People would enjoy each other's company in rooms called sitting rooms.

#### **Hygiene**

- Regular bathing of the entire body was not a common practice. Most Americans were never completely naked.
- People washed their faces, hands, feet, and necks on a daily basis. They had washstands to do this.
- There was no deodorant.

## Clothing

### **Women and Girls**

- They wore a loose fitting undergarment called a shift and a petticoat under their gowns. The undergarments were made to protect the outer clothing from body odor. Shifts were also worn to bed.
- Women also wore bonnets and aprons.

### **Men and Boys**

- They wore loose fitting shirts, vests, coats, and trousers or pantaloons.

### **Both Sexes**

- Both men and women wore woolen socks and leather shoes. Scarves were often tied around their necks.
- In the winter, people wore fleecy woolen underwear or long flannel drawers and cloaks.
- Clothes for children were made to last a long time. They were generously cut with tucks and hems that could be let out as they grew.

## Home Production of Clothing

### **Not every home produced its own cloth**

- In the colonial period, less than half of all households had spinning wheels.
- Fewer than 10% owned looms or raised sheep or flax.
- Domestic production in New England focused on bed and table linens, linen shirts, shifts, petticoats, aprons, and summer pantaloons.
- People still purchased imported textiles and already made dresses and coats.
- Women were responsible for planning and making most of the clothing for the entire family.

During the Revolutionary War, England stopped exporting cloth and other goods to the colonies. Women had to weave their own cloth.

- Cloth made in the home was called “homespun.”
- Farmers grew cotton and flax, and many colonists raised sheep.
- During the war, many patriots stopped butchering their sheep in order to use their wool for cloth-making.
- In 1775, women made 13,000 wool coats for soldiers. Each coat had a label on the inside with the name of the woman who sewed it and the town she lived in. The soldiers who wore those coats are called the “Coat Roll.”

### **How is wool homespun cloth made?**

- First, the sheep is sheared.
- The wool is washed to remove grease and impurities.
- Any burrs or sticks are picked out of it by hand.
- Then the wool is carded. The wool is placed between two hand-held boards with teeth. The boards are pulled in opposite directions to brush out and straighten the fibers.

### **Spinning the Fibers into Yarn**

- Spinning is the process or processes used in the production of single yarns or of fabrics generated directly from polymer.
- Wool is elongated and the diameter is reduced in the step called drawing.
- Next the fibers are twisted which further reduces the diameter and secures the fibers together into yarn.
- Then the yarn is wound onto a suitable core.
- The tool used in this process is the spinning wheel. Spinning wheels were handmade out of wood.
- Wool wheels are also called walking wheels. A woman could walk three or four miles in the course of one day's spinning.

### **Weaving the yarn**

- Strong yarn is drawn vertically on the loom and is called the warp.
- Certain heddles are selected; creating an opening in the warp called the shed.
- The horizontal yarns, called the weft, are passed through the shed on shuttles.

### **Dyeing is an optional step that can be done at three different stages**

- Wool can be dyed after it has been washed, spun or woven.
- Dyes were made from natural ingredients like berries, bugs, or tea leaves.
- Mordants could be added to keep the dye fast and to change its color.

### **Sewing the Fabric into Clothes**

- Whether cloth was made at home or not, every woman and girl helped with the sewing.
- They were responsible for developing and fitting patterns, picking out fabrics, cutting out the garments, sewing, making buttonholes, and mending.

### **Work Cycle**

- Sheep-shearing was done in the spring so that the sheep's fleece would have time to grow back before winter.
- Scouring, carding, and spinning were sometimes put off until the busy summer months were over.
- Weaving usually began in the fall and continued throughout the winter.
- Wool was usually spun first, then linen in late winter.

## ***Colonial Times Questions & Answers Guide***

### ***How did colonial women make soap?***

Soap was made by boiling tallow or cooking grease with lye. The lye was made from wood ashes. Sometimes they would add a small amount of quicklime in order to make hard soap.

### ***How did colonial women make candles?***

Wicks could be bought but some colonial women chose to weave or braid their own. The wicks were dipped in pots of melted tallow or wax was poured into the molds and left to cool and harden. Candles were made in large quantities and had to be stored in closed containers to keep rats and mice away.

### ***How did people see at night?***

During colonial times, light was considered a luxury. People often used the moonlight and the firelight to see after dark. Sometimes knots of pine pitch, called candlewood, were burned for light. Candles were used sparingly, as they were usually handmade and were a fire hazard. A safer alternative was tiny wax tapers floating on a thin layer of oil in a glass of water. Eventually kerosene lamps were available yet they were unreliable and expensive.

### ***Did anybody have running water?***

In the late 1700's, piped water systems were set up in some cities. Water flowed through log pipes to the kitchen, cellar, scullery, or woodshed by gravity.

### ***What did colonial women use to clean the floors?***

Floors were usually unfinished, with no paint, stain, wax, or sealer. Brooms were made from cornhusks or straw and mops were made from old rags of yarn. Women used sand to polish the floors, and then a clean layer of sand was left on the floor as a protective covering. The sand was also swept into decorative patterns.

### ***Wouldn't feather and straw beds attract insects?***

Mattresses did attract bugs. Tobacco, camphor, or herbs were often added to the stuffing to keep moths away. The expression, "Sleep tight, don't let the bed bugs bite," refers to the colonial era.

### ***What made laundry so difficult?***

Laundry required an enormous amount of lifting and scrubbing. Large amounts of water were needed to wash and rinse clothes. Since most families did not have running water, all of that water had to be carried inside during the winter. Drying the laundry was another tricky task in the winter. It was so cold inside homes that the laundry would sometimes freeze. It had to be dried by the fire, which was a fire hazard.

### ***How often did people wash their clothes?***

Women's shifts, petticoats, aprons, neckerchiefs, men's shirts, and children's clothing made up the bulk of the weekly washing. Coats, gowns, and trousers were only washed once in a great while, if ever.

***Were colonial men and women interested in fashion?***

Like today, people were concerned with fashion, especially young people. Women would sometimes take trips to cities like Newburyport or Boston, to see new styles. Sometimes they would buy a gown and use it as a model to make others when they got home.

***Was the homespun cloth fashionable?***

No. Before the Revolution in particular, many homespun woolen goods were coarse. The cloth was used mostly to make work clothes.

***How does a spinning wheel work?***

A flick of the wrist or a turn of the wheel propels spinning. Fibers are stretched by hand, twisted by the spindle, which is a revolving shaft that provides the twist, and then wound. During the Middle Ages the flyer was invented. The flyer guides the drafted fiber to the spindle, so that twisting and winding happen at once.

***How is the warp put on the loom?***

The warp threads are wound onto a revolving cylinder with a warping mill. Once the warp had been wound on to the warping mill, it is unwound on to a warp beam, which fits on the rear of the loom. Then each yarn is drawn through the heddles (which select certain warp strings) and the reed (which preserves their parallel spacing). The warp is then wound to the cloth beam, which is located in the front of the loom.

## Pre-Visit Lesson Plan

**Title:** Homemade Journal

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 class period (to make the book)

### Objectives:

- Students will know about children during the colonial days often making copybooks and that beautiful handwriting was emphasized
- Students will know how to create a homemade journal to use for post-visit lessons

### Materials:

(The following material amounts are per student)

- 1 sheet of decorative paper 9"x12" (wallpaper, colored paper, or wrapping paper work well)
- 1 sheet of brown paper 9"x12" (From a paper bag)
- 8-10 sheets of 8 1/2"x11" plain white paper
- Large-eye needle
- 15" of strong thread
- 2 clip-type clothespins
- 1 copy per student of Instructions (included with lesson)
- Glue
- Scissors

### Steps:

1. Explain to the class the following:
  - ~During the colonial period, children would make their own copybooks.
  - ~Beautiful handwriting was emphasized in the 1770s and children would practice their penmanship using quill pens.
2. Inform students that they will be:
  - ~Constructing their own notebook and then using it to practice writing with a feather pen. (See post-lesson plan: "Museum Trip Journal".)
  - ~They will use it to document their trip to the museum.
2. Pass out the Instructions titled "Homemade Journal" and then review with students.
3. Pass out supplies and assist students with the journal-making.
4. When the journals are made, set aside to be used after the field trip to the museum.

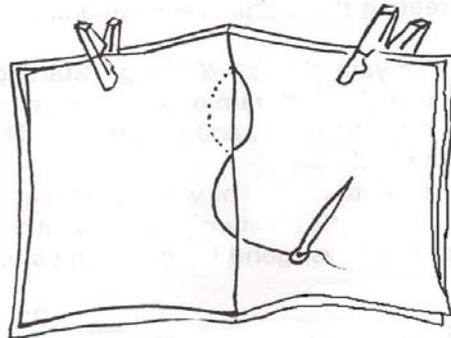
## Homemade Journal Instructions

### Materials Needed:

- 1 Sheet Decorative Paper, 9"x12" (Wallpaper, colored paper, or wrapping paper work well)
- 1 Sheet Brown Paper, 9"x12" (From a paper bag)
- 8-10 Sheets of plain paper, 8 1/2"x11"
- Glue
- Scissors
- Large-eye Needle
- 15" of Strong Thread
- 2 Clip-type clothespins

### Instructions:

1. To make the cover: Spread paste or glue on the brown paper and glue it to the decorative paper. Set aside to dry.
2. The pages are made by folding each piece of paper in half, making a sharp crease. Unfold each sheet and stack them, forming the inside of the journal.
3. Fold the cover in half and place the folded pages inside. Clip them together with clothespins.
4. With a pencil, make a mark in the middle of the fold in the center of the book. Make another mark 3" above and 3" below the center mark.
5. Poke three holes through the pages and the cover, using the needle.
6. Thread the needle with the thread. Make a knot about 3" from the end.
7. Sew the pages and cover together. The first stitch is through the center hole, from the inside to the outside. The second stitch is from the outside back to the inside. Third stitch is through the center again, inside to outside. The last stitch is down and through the bottom, outside to inside. Make a knot on the inside with the two ends. Cut off the ends.



## Pre-Visit Lesson Plan

**Title:** Shoebox Loom

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 2-3 class periods

### Objectives:

- Students will know how to create a loom from a shoebox and weave a small piece of cloth on it
- Students will know the essential elements necessary to weave fabric.
- Students will gain an appreciation for the time and energy involved in home textile production

### Materials:

Each student will need:

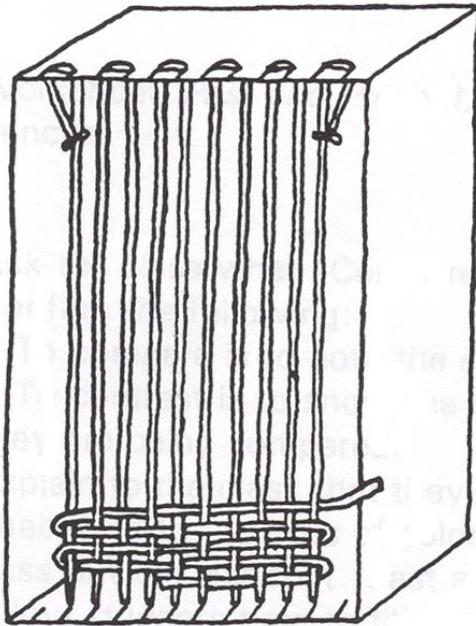
- Shoebox (Cover is not needed)
- Scissors
- Strong Thread
- Yarn

### Steps:

1. Explain to class that they will be learning about the essentials of cloth-making by weaving on a loom they will create out of a shoe box.
2. Pass materials out to students and have them follow you in the process step-by-step through demonstration.
3. Use scissors to cut ½" deep slits ½" apart along the two short sides of the shoebox.
4. Wind the strong thread in and out of the slits across the front of the box, creating the warp. Tie each end on to the string next to it.
5. Cut a piece of yarn about 1 ½' long. Starting in the center of the box, begin weaving the yarn over and under the warp strings that you went under last time, and vice versa. These horizontal strings are called the weft.
6. When you finish the piece of yarn, start a new one the same way. You don't need to tie the two pieces together.
7. Every couple of rows, gently push them down to tighten the weaving.

8. When you get to the top, it's time to remove your weaving. Carefully slip it off the notches. Cut the warp strings, two at a time, and tie them together. This will hold the weaving together and it makes a fringe.

**Example:**





# Post-Visit Lesson Plans



## **Post-Visit Lesson Plan**

**Title:** Compare and Contrast Our Lives

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 hour

### **Objectives:**

- Students will be able to compare and contrast their own lives to what they learned about the lives of people during colonial era
- Students will achieve a greater understanding of life during the colonial times by understanding the advances that have been made since this time
- Students will understand the economic impact of Industrialization.

### **Materials:**

- Worksheet, *Past and Present, Compare and Contrast* (attached)
- Pencils

### **Steps:**

1. Ask the class what “Compare and Contrast” means.
2. Confirm the following:
  - ~To compare is to note the similarities between to things.
  - ~To contrast is to show the difference between two things when they are being compared.
3. Explain to the class that they will be comparing and contrasting their lives to the lives of colonial people.
4. Pass out the Handout “Past and Present, Compare and Contrast”
5. Allow students time to fill the worksheet out thoroughly.
6. Come together as a group and ask the group the following questions and discuss:
  - ~What type of tools did you observe while at the textile museum that we do not have the need to use today?
  - ~What major advancements have made life today different from life during the colonial times?
  - ~What are some things that you listed that are necessities for living?
  - ~How are they similar and how are they different today, as opposed to during colonial times?

## ***Past and Present*** **Compare and Contrast**

**Stop and Think:** Consider all of the ways in which everyday life during colonial times was different than your life today.

**Instructions:** In the chart below, fill in five different household needs, chores, and tools/appliances. Compare and Contrast. (Follow the example):

<u>Necessity for living:</u>	<u>What was used during colonial times:</u>	<u>What we use today:</u>	<u>Similarity between the two:</u>	<u>Differences between the Two:</u>
(Example.) <b>Clothing</b>	<i>Homespun fabric, fabric woven on a weave loom, and then sewn.</i>	<i>Most clothing is manufactured by machine.</i>	<i>Quality clothing is made from natural fibers.</i>	<i>Today our clothing can also be made from synthetic fibers.</i>
1)				
2)				
3)				
4)				
5)				

# Post-Visit Lesson Plan

**Title:** Family Tree

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1-3 class periods

## Objectives:

- Students will understand some dynamics about the lives of the family members that they learned about during the Fleece to Fabric Program at the Museum.
- Students will gain understanding about their own family structure by creating a personal family tree.

## Materials:

- Worksheet Handout “Family Tree” (included with this lesson)
- Pencils
- Variety of materials to create a visual family tree:
  - Paper/colored paper
  - Markers
  - Scissors
  - Glue
  - Old magazines
  - Photographs

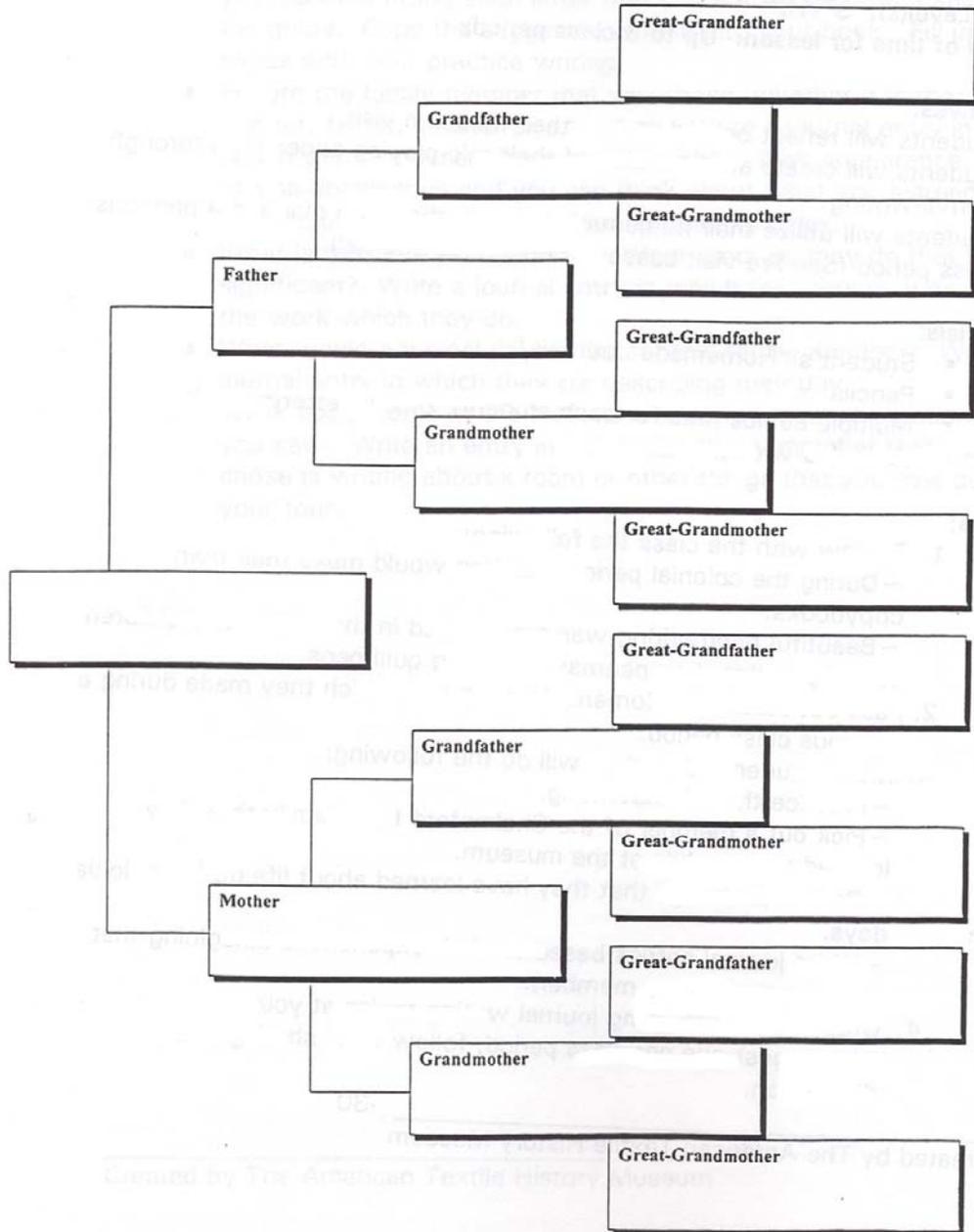
## Steps:

1. Ask the class what they remember about the family they learned about while at the museum.
  - ~Who were the family members?
  - ~When did they live?
  - ~What was each person’s role in the family?
2. Ask the class if they can tell you what a family tree is.
3. Explain to the class that they will be creating their own family tree.
4. Ask the class how they could represent a family member other than just by using their name. (Photographs, portrait drawings, cartoons, pictures of favorite things of that family member, etc.)
5. Pass out the Worksheet Handout that was included with this lesson titled “Family Tree.”
6. Explain to the class that they can begin thinking about their family by filling in this chart. From there, they will begin to think about ways they can create a family tree using other materials. Give them the following guidelines:
  - ~Your family tree can be on any size of paper.
  - ~You can represent each member of your family through more than just their name. You can use pictures and words, etc.
  - ~You can make it look like a tree with branches representing different people, or you can be creative and come up with your own way to show the various family members’ roles in your life.
7. Give students work time and encourage students to come up with alternative ways of representing people, using an array of materials and creativity.
8. During a separate class period, hold a class critique (follow the lesson Plan that is included with this Teacher’s Guide, titled “Class Critique”).

# Family Tree

At the program, Fleece to Fabric, you viewed the family tree of a farm family that had lived in Chelmsford for many years. Create your own family tree. Be creative! Your family tree can be on paper of any size. You can use photographs, drawings, found materials, colored paper, cut-outs from magazines, words or writing to tell us who your family members are.

To the right is a chart you can fill in to get started.



# Post-Visit Lesson Plan

**Title:** Journal Entries

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** Up to 5 class periods

## Objectives:

- Students will be able to summarize their reflections on their museum visit
- Students will be able to create an extension of their role-playing experience through journal-writing
- Students will find application for their homemade journals that they made in a previous class period (See Pre-visit Lesson “Homemade Journal”)
- Students will appreciate the emphasis on skilled penmanship of earlier times

## Materials:

- Student’s “Homemade Journals”
- Pencils
- Multiple copies (one for each student), of the Lettering Guide (included with this lesson)

## Steps:

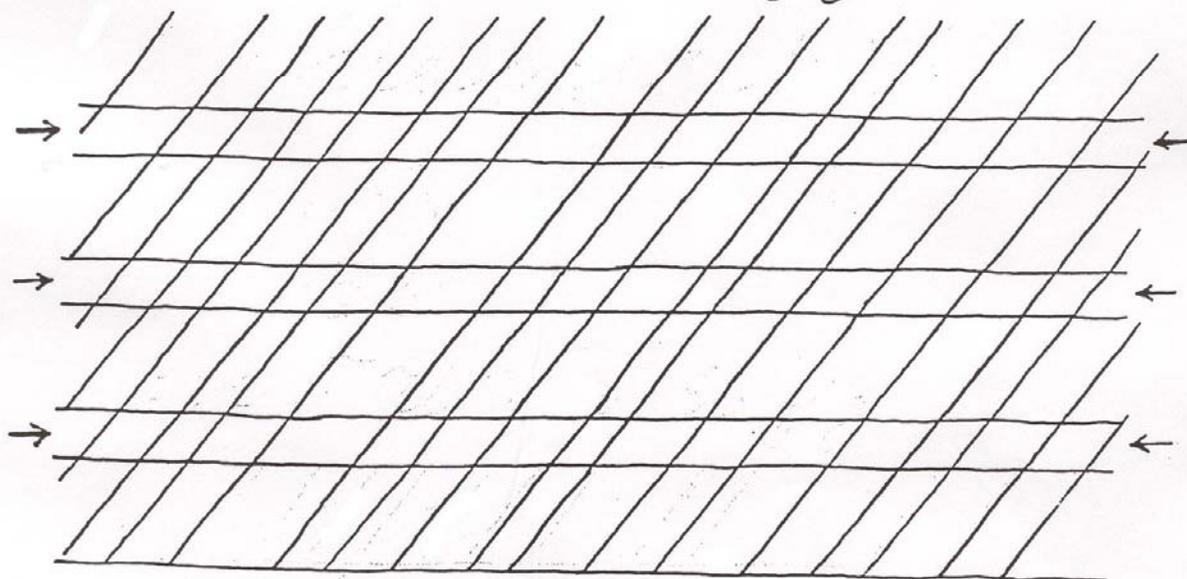
5. Review with the class the following:
  - ~During the colonial period, children would make their own copybooks.
  - ~Beautiful handwriting was emphasized in the 1770s and children would practice their penmanship using quill pens.
2. Pass out students “Homemade Journals” which they made during a previous class period.
3. Inform students that they will do the following:
  - ~Practice their handwriting.
  - ~Pick out a member of the Chelmsford farm family that they learned about while at the museum.
  - ~Reflect on things that they have learned about life during colonial days.
  - ~Write journal entries based on their experiences (imagining that they are that family member).
4. Organize the following journal writing topics at your classes pace. We suggest one per class period, followed by sharing and discussion.

## Suggested Journal Entry Topics

- Using the Lettering Guide, practice your handwriting. The focus of this assignment should be in creating neat and beautifully written letters. You may take the guide and place it underneath a page in your journal, fitting each letter that you are writing into a space on the guide. Copy the suggested phrase into your book. Fill up two pages pages with your practice writing.
- Picture the family member that you chose, whether it is the mother, father or brother. Write a journal entry in which they are describing something about their appearance. You can be imaginative, and you can think about what you learned about clothes, hygiene, etc., during colonial times.
- What is their role in the family? What work do they do that is significant? Write a journal entry in which that person is describing the work that they do.
- What would a typical day be like for this family member? Write a journal entry in which they are describing their day.
- Think about some of the exhibits and period room re-creations that you saw. Write an entry in which the family member that you chose is writing about a room or other things that you saw during your tour.

## Lettering Guide

a b c d e f g h i j k l m  
n o p q r s t u v w x y z  
A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z



### COPYBOOK MAXIM

A saying written into a copybook by a student practicing handwriting.

*Hold fast to that which is good.*

*Better suffer a great evil than do a small one.*

*Modest deportment ever commands admiration.*

## Post-Visit Lesson Plan

**Title:** Workers' Web

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 class period

### Objectives:

- Students will understand the economic concepts of specialization, interdependence, consumers, producers, and dynamics of goods and services needs

### Materials:

- Job label stickies (teacher selects jobs she/he wishes to represent in this lesson)
- Ball of yarn

### Steps:

1. Give each student a “workers’ sticky” label sticker with the name of a 21<sup>st</sup> century job on it
2. Have students sit in a circle
3. Review how we use goods and services and how we are both producers and consumers in many cases [see Vocabulary list within this guide for definitions]
4. Review the concept of specialization v. interdependence as related to jobs and economics
5. Identify and discuss all of the workers and their jobs in the group, adding others if you wish
6. Choose the first student to hold onto the ball of yarn. Keeping hold of the yarn end, have that student pass it to another student in the group who provides a good or service that the yarn holder needs
7. Repeat step #6 until all students have participated, with each keeping hold of their spot on the length of yarn as the ball unwinds
7. When all students have received the yarn ball and chosen the next job holder they are “dependent on,” (try to connect the first student to the last), note that you have created a present-day “workers’ web” with the yarn

# Post-Visit Lesson Plan

**Title:** Class Critique

**Program:** Threads of Learning – Fleece to Fabric

**Grade Level(s):** 2-5

**Length of time for lesson:** 1 class period

**Note to Teacher:** \*This lesson is intended to be used as a format for discussing any of the projects or student work that is a product of the pre and post-visit lessons included in this Teacher Guide.

## Objectives:

- Students will be able to gather, present, and comment on each other's work.
- Students will expand their critical thinking skills, as well as elaborate on their knowledge of the subject matter.

## Materials:

- Current project or student work

## Steps:

1. Discuss the meaning of “constructive criticism” through the following conversation with students:
  - ◆ Ask the class what “constructive criticism” means.
  - ◆ Verify what the phrase means:
    - ~Comments do not have to be negative.
    - ~Comments should be helpful in learning
    - ~Comments should focus on what we do well
    - ~Comments can point out positive aspects of the work
    - ~You can make comments on how one can improve; the point is not to criticize, but to help someone improve. With every project, we ALL have room for improvement, as well as many positive things that we do well.
    - ~Also mention that being able to accept feedback from others is a great way to learn to grow and develop our work.
2. Explain to the class that they will be taking part in a class critique. Each student will take turns presenting their work and receiving feedback from their peers.
3. Gather students into a circle and have them take turns presenting to the group. Each “presenter” should do the following 3 things during their turn:
  - A. Show their work for the class to see
  - B. Explain something about their experience in making the piece. (Difficulties, what went well, what they liked about making it)
  - C. Explain how their finished work fulfilled the assignment.

4. After each “presenter” has a turn presenting, allow time for “constructive critiques” to make comments:  
Constructive critiques should mention the following:
  - ~What they like most about their peer’s project.
  - ~Mention one suggestion, something they could have added, done differently, suggestion, etc.

**\*Please Note:**

- ~the amount of time each student will have to present and receive feedback should be dependent on how much total time you want to dedicate to this process. Please note the time limit per students in order to avoid one students receiving significantly more attention than others.
- ~Class Critiques can be difficult for sensitive students. Please be aware of this and remind and encourage students to keep comments positive and focusing on being helpful.

## **Additional Information**



## Fleece to Fabric Vocabulary

**Apprentice:** A person who works for another to learn a trade

**Artisan:** A person skilled in a certain applied (put to good use) craft

**Barter:** To trade by exchange of goods or services rather than by the use of money

**Bay:** A body of water forming an indentation on the shoreline

**Cardinal Directions:** North, South, East, West

**Carding:** The process of combing out the fibers to prepare them for spinning

**Cargo:** Goods carried by a ship

**Colony:** A group of emigrants who settle in a distant land but remain subject to or connected with the parent country

**Consumer:** Person who uses goods or services

**Continent:** One of the 7 principle land masses of the globe

**Craftsman:** A person skilled in a certain craft

**Dependent:** Relying on someone else for aid

**Economy:** How a community manages its resources

**Export:** To send goods to another country to be sold

**Fiber:** The unit making up a textile raw material, such as cotton, wool, alpaca, and llama. If fibers have a sufficient length or strength they are spun into yarn

**Flax:** An annual plant with flowers that grows to 40 inches tall. Cultivated for fiber and seed

**Goods:** Products or things

**Embroidery:** Ornamental designs that are worked with thread

**Hackle:** An instrument with long iron teeth set in a board for cleaning flax

**Heddles:** On a loom, a set of parallel cords that are used to separate the warp and make a path for the shuttle

**Hemisphere:** Either the north or south half of the Earth divided by an equator, or east or west half divided by a geographic meridian

**Import:** Bring goods from another place or country

**Interdependence:** Mutual dependence on each other (for goods and services)

**Knitting:** A method of constructing fabric by interlocking series of loops of one or more yarns

**Landform:** A feature on the earth's surface, such as a mountain, valley, or plateau

**Latitude:** The angular distance north or south of the Earth's equator along a meridian

**Linen:** Yarn, thread, or fabric made from flax fibers

**Longitude:** The angular distance east or west of the prime meridian in Greenwich, England

**Loom:** A machine or device from which cloth is produced by interweaving threads at right angles

**Mercantilism:** The idea that a nation's existence depended on power, and power depended on wealth

**Merchant:** A person who earns money by buying and selling goods

**Mouth (as in river):** Opening into the sea

**Picking:** The process of removing impurities by hand

**Producer:** Person who creates goods or services

**Pulley:** A wheel for supporting, guiding, or transmitting force to or from a moving rope or cable that rides in a groove on its edge

**Quilt:** A warm bedcovering made of three layers, including a top layer that is pieced, a middle layer that is padded, and a bottom layer, all stitched together with thread

**Reel:** A simple machine for winding yarn

**Rolag:** a continuous, soft, and slightly twisted strand of wool

**Screw:** Something having a spiral form

**Self-sufficient:** Ability to supply one's needs without external assistance

**Services:** Assistance to someone; benefits to them

**Shearing:** Cutting wool from a sheep

**Shuttle:** A device used in weaving to carry the weft thread back and forth between the warp threads

**Skein:** A loose, long cord of thread or yarn

**Skill:** Ability to use hand or body as used in game playing

**Source (as in river):** The beginning of a river

**Specialization:** Line of work in which one concentrates

**Spindle:** A pin or rod holding a bobbin or spool upon which thread is wound on a spinning wheel or spinning machine

**Spinning:** The process of turning fibers into yarn or thread

**Spinning Wheel:** An apparatus for making yarn or thread, consisting of a foot or hand driven

**Strategy:** A plan of action that is used in playing games

**Swift:** A lightweight reel on which a skein of yarn can be placed and from which it can be unwound and rewound onto another package like a bobbin

**Textile:** Cloth made from fiber by weaving, knitting, or felting

**Trade:** Voluntary exchange of goods

**Tributary:** A stream or river that flows into a larger body of water

**Warp:** The strong yarns that run vertical on the loom

**Weaving:** To make cloth by interlacing the threads of the ward and the weft on a loom

**Wedge:** Something used to part, split, or divide

**Weft:** The yarns that are interlaced horizontally through the warp

**Wheel:** A circular frame or disk that can revolve on its axis

**Wool:** The soft curly hair forming the coat of the sheep

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## Suggested Readings

- Bracken, Jeanne Munn. Life in the American Colonies: Lifestyles of the Early Settlers. Carlisle, MA: Discovery Enterprises, Ltd., 1995
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# **Fleece to Fabric**

## **Connections to the Massachusetts Curriculum Frameworks**

### **History and Social Science Curriculum Frameworks**

#### **Grade 3**

##### Concepts and Skills

History and Geography - 1, 2, 3, 4, 5.

Civics and Government -7.

Economics -8, 9, 10.

##### Learning Standards

New England and Massachusetts -3.1, 3.2, 3.5, 3.6, 3.7.

Cities and Towns -3.8, 3.9, 3.11, 3.12

#### **Grade 4**

##### Concepts and Skills

History and Geography -1, 2, 3.

Civics and Government -5, 6

Economics -7, 8, 9.

##### Learning Standards

Optional Standards for Ancient China- 4.4

Regions of the United States-- 4.22

Canada- 4.23

Mexico- 4.29

#### **Grade 5**

##### Concepts and Skills

History and Geography -1, 2, 3, 4, 5, 6.

Economics -12, 13, 14, 15.

##### Learning Standards

Pre-Columbian Civilizations of the New World and European Exploration, Colonization and Settlement to 1700 – 5.3, 5.6, 5.7, 5.9.

The Political, Intellectual, and Economic Growth of the Colonies, 1700-1775- 5:10, 5:11, 5:12.

The Revolution and the Formation of a Federal Government under the Constitution, 1775-1789- 5:15, 5:17.

The Growth of the Republic – 5:30, 5:31, 5:32.

#### **Grades 8-10**

Pathway 1. Grade 10. U.S. History II, 1763-1877.

Pathway 2. Grade 9. U.S. History 1, 1763-1877.

Pathway 3. Grade 8. U.S. History 1, 1763-1877.

Pathway 4. Grade 10.U.S. History 1, 1763-1877.

Pathway 5. Grade 9. U.S. History 1, 1963-1877.

## English Language Arts

~Language Strand, Learning Standard 1: Students will use agreed upon rules for formal and informal discussions in small and large groups.

## Science and Technology

~Strand 2: Physical Sciences: Transformation of Energy

~Strand 3: Understanding and Using Technology

~Strand 4: Science, Technology, and Human Affairs

## Mathematics

### Grades 3-4. Number sense and operations

4.N.10. Select and use appropriate operations (addition, subtraction, multiplication, and division to solve problems, including those involving money.

4.N. 11. Know multiplication facts through 12X12 and related division facts.

4.N.12. Add and subtract, and multiply.

4. N. 17. Select and use a variety of strategies to estimate quantities, measures, and the results of whole-number computations up to three-digit whole number amounts of money to \$1,000, and judge the reasonableness of the answer.

### Grades 5-6. Number sense and operations

6.N.9. Select and use appropriate operations to solve problems involving addition, subtraction, multiplication and division.

6.N.13. Accurately and efficiently add, subtract, multiply, and divide whole numbers and positive decimals.

### Grades 5-6. Data analysis, Statistics, and Probability

6.D.4. Predict the probability of outcomes of simple experiments and test the predictions.

### Grades 7-8. Number Sense and Operations

8.N.12. Select and use appropriate operations – additions, subtraction, multiplication, division, and positive integer exponents – to solve problems with rational numbers.

### Grades 7-8. Patterns, Relations and Algebra

8.P. 1. Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible, symbolic expressions.

### Grades 7-8. Data Analysis, Statistics, and Probability

8.D.2. Select, create, interpret, and utilize various tabular and graphical representations of data.

## Arts

~Creating and Performing Strand, Learning Standard 1: Students will use the arts to express ideas.

~Thinking and Responding Strand, Learning Standard 3: Students will use imaginative and reflective thinking during all phases of creating and performing.



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